

operation, and maintenance at the facility warrant modification. A schedule for plan review and procedures for plan modification should also be described in the Plan. The Plan should also be reviewed when new conditions require changes in the emergency response procedures and any time a slug has occurred.

The general elements of IU Slug Control Plans are as follows:

- GENERAL INFORMATION: IU Name and Address, IU Contact, Discharge Practices, Security Provisions and Employee Training (Section 2.3.4.1)
- FACILITY LAYOUT FLOW DIAGRAMS: General layout including mapping of manufacturing, storage, transportation, and disposal areas (Section 2.3.4.2)
- MATERIAL INVENTORY: Types, volumes, containers, etc. (Section 2.3.4.3)
- SPILL AND LEAK PREVENTION EQUIPMENT AND OPERATIONS AND MAINTENANCE PROCEDURES: Definition of available equipment, plans to obtain equipment (Section 2.3.4.4)
- EMERGENCY RESPONSE EQUIPMENT AND PROCEDURES: Inventory and location of equipment; and procedures (Section 2.3.4.5)
- SLUG REPORTING: Description of procedures for notifying POTW (Section 2.3.4.6)
- TRAINING PROGRAM: Assurances that the Plan is implemented by providing for employee training (Section 2.3.4.7)
- CERTIFICATION: A certification by a professional that the Plan is adequate to prevent and control slugs (Section 2.3.4.8).

Two sample plans appear in Appendix D.

#### 2.3.4.1 General Information

An IU Slug Control Plan must include sufficient general information to enable the POTW to: (1) categorize and restrict the IU's potential for a slug discharge; and (2) respond promptly and effectively in an emergency. General information should include a brief description of the IU, discharge practices, applicable pretreatment standards, and description of previous slugs and corrective actions. The information requested in the Industrial User Slug Potential Survey (Figure 2-2) is an outline of the kinds of information generally required in this element of a Slug Control Plan.

#### 2.3.4.2 Facility Layout Flow Diagrams

Each Plan should include detailed drawings of the facility showing the following:

- General layout of the facility
- Areas occupied by manufacturing or commercial activities; property boundaries, drainage of rainwater, and connections to the city's sanitary sewer and storm drains
- Hazardous materials process and storage areas; waste handling, storage, and treatment facilities
- Loading and unloading areas
- Direction of drainage from hazardous materials and waste handling, process, storage, and treatment areas
- Floor drains, pipes, and channels which lead away from potential leak or spill areas [identify by coding footnotes, or narratives describing drainage patterns]
- Flow diagram(s) showing chemical and wastewater flow including piping and instrumentation, flow rates, tanks and capacities, treatment systems, and final destinations of flows.

#### 2.3.4.3 Material Inventory

The facility should provide sufficient data on all materials of concern used and stored at the facility. This may include those materials for which the POTW has established local limits (see Section 2.2.1). This information is useful in determining the origin of a slug, potential hazards and appropriate slug response procedures. Descriptions of the material handled, the location of these materials, descriptions of containment, transfer and transport, as well as any additional comments should be provided as follows:

- Materials - Both chemical and trade names should be listed in the inventory (OSHA MSDSs may be used). This information may help minimize confusion over the constituents of a compound and facilitate proper response procedures to a slug.
- Location in Plant - Knowing the location of (RQ) materials will assist plant employees and emergency response personnel in locating areas initially affected by a spill.
- Maximum Volume/Container Volume - This information is useful in determining the potential impact of a slug.

- Container Description - The description should include the type of container (e.g., steel drum, fiberglass tank, etc.) and the presence of container attachments such as valves, pumps, transfer pipes, etc. The description of a container will help determine potential origins of a slug load.
- Transfer and Transport Areas - The condition of containers and transfer equipment is useful in assessing the potential for accidental spills or slug discharges of high strength wastes and possible effects on the treatment plant.
- Additional Comments - Additional comments should include information on the physical, chemical, and toxicological effects of each material, and special precautions that should be taken when handling these materials. A discussion should also be provided on the procedures to prevent contact between incompatible materials. Each facility must demonstrate that the following three compatibility aspects have been considered: (1) the construction of the container; (2) other materials in the immediate vicinity; and (3) the surrounding environment.

#### 2.3.4.4 Spill and Leak Prevention Equipment and Procedures

This subsection is divided into a discussion of equipment and procedures. It provides information on the data an IU Slug Control Plan could contain. It also provides technical information that may be used to evaluate the adequacy of the equipment and procedures detailed in an IU Plan. The POTW's review and evaluation of the IU Plans should use, but not be limited to the information provided here. Additional references, including those listed in Appendix E, should be reviewed and a thorough understanding of the IU operations should be achieved prior to evaluating the IU Plan.

#### Existing and Proposed Spill Prevention and Containment Equipment

Equipment required to control spills falls into two categories;

- Equipment to prevent spills
- Equipment to contain spills.

This section of the IU's Slug Control Plan should identify all existing equipment and/or systems that the IU has in place or plans to obtain to implement the Plan. If equipment needs to be purchased, the expected purchase dates should be provided.

The Plan should describe current and projected inventories of both types of equipment. Equipment to prevent spills consists of appropriately selected chemical storage and process equipment, as well as built-in safeguards to prevent chemicals from being spilled such as secondary containment structures. Spill containment equipment consists of equipment or apparatus to keep a spill from spreading and to remove the spill. Examples of prevention and containment equipment are listed below:

- Equipment to Prevent or Detect Spills

- Chemical Storage and Process Tanks: holding tanks, pumping equipment (compatible material); shell and bottom construction (compatible material); underground seepage protection; cathodic protection of underground tanks; liquid level sensing devices; overflow, temperature, pressure alarms; heating coils; collision protection support construction; secondary containment; diversionary structures in quench tanks
- Drums: drum construction; storage areas; secondary containment; diversionary structures; collision protection; drum handling equipment; drip pans
- Pipes, Valves, Fittings, Pumps, Electrical and Mechanical Equipment: seals; valve stem packing; gaskets; cathodic protection; vehicular traffic warning signs
- Loading Stations: fill safeguards; curbs and drains; warning signs/improper disconnect protection; secondary containment
- Alarm Systems: to detect unauthorized discharge flows, pH excursions, etc.

- Equipment to Contain Spills: booms, barriers, sweeps, and fenders; surface collecting agents; absorbent materials; skimmers; oil/water separators; sumps; sewer plugs.

Once spill potential reduction measures have been addressed, secondary containment systems should be considered. An IU which has the potential for a slug discharge should provide secondary containment systems, wherever possible, that will control the spread of a spill of toxic wastes or slug discharges of high-strength wastes at or near a potential spill source (e.g., storage tanks, processing equipment and piping). Several forms of secondary containment systems may be used including diking, diversion, holding tanks, or quick drainage. These methods are described below.

Diking is the most effective form of secondary containment for bulk chemical storage. Dikes can be constructed from concrete, cinder blocks, or earth. Bulk storage tanks and/or drum storage should be surrounded with an impervious dike that will hydrostatically contain 110 percent of the capacity of the largest tank or the capacity of the largest tank plus water from a maximum 24 hour/10 year rainfall event, whichever is greater. Accumulated rainwater from diked areas should be drained with a manually operated pump or siphon system. If a valve pipe has been installed through the dike wall, the drainage valve should be kept locked in the closed position when not in use. Flapper valves should not be used.

Design of the dike should account for the containment of a spraying leak from the side of the tank. Where this design is not feasible, baffles could be installed at the top of the dike that would deflect potential leaks and cause them to drop within the containment area.

Diversion of flow of potentially spilled material away from its naturally expected path can also be an effective means of secondary containment. Diversionary structures consist of curbs, sumps, and/or gutters which divert spilled material to a collection tank. A quick drainage system is frequently employed in small volume storage and loading areas. It consists of an impervious curbed or below gradient pad that slopes into a drain that is connected to an impervious sump. Spilled volumes of liquid are collected in the impervious sump and then removed and appropriately treated, discharged, or disposed of. These structures should be used in areas where diking is impractical or unsafe.

For example, chemicals which emit noxious fumes might be diverted to a closed tank in the event of a spill, rather than left in an open diked area. Diversionary structures can include quench tanks, which serve to simultaneously collect and treat chemicals. Many industrial facilities possess process quench tanks to control runaway chemical reactions.

#### Procedures

The operation and maintenance procedures designed to minimize spills at a facility are as important as the selection and installation of the

equipment. Many operation and maintenance procedures are common-sense, however, and should be adequately included in every Plan. For example, incompatibility of materials with the container can result in leaks or explosion of the container. Elements of good housekeeping include neat and orderly storage of chemicals and prompt cleanup of spilled liquids or powders to prevent them from reaching the sewer collection system. An effective preventive maintenance should include periodic inspections and testing of equipment systems, appropriate adjustment, repair, or replacement of valves and other parts. Also, a security system to prevent accidental or intentional entry to the IU site would reduce the risk of vandalism, theft, sabotage, or other illegal use of the plant facility that could possibly cause a slug loading.

Simple operating and maintenance procedures directed at eliminating spills and leaks include, but are not limited to, the following:

- Inspect All Chemical Storage Vessels, as Well as All Process Vessels and Fittings (Pumps, Valves, Piping): The items must be constructed of material compatible with the chemicals passing through them. In particular, tanks and drums used to store corrosive chemicals should be constructed of stainless steel or of a corrosion resistant plastic. The plan should discuss all routine operation and maintenance (including housekeeping and replacement of worn-out equipment) performed to minimize spills. The frequency of inspections and monitoring for leaks or other conditions that could lead to spills should also be indicated. Any pumps or valves used to process these chemicals must possess corrosion-resistant seals and packings. Similarly, pumps or valves through which organic chemicals pass must contain seals and packings which are dissolution-resistant. The IU should indicate in its Plan that appropriate materials of construction have been used, and are compatible with the chemicals being processed.
- Inspect Foundations and Supports of Large Storage Tanks, Process Vessels, and Piping. These must also meet compatibility and integrity requirements: All above ground vessels should be protected from vehicular damage through the use of truck guards. Underground vessels and pipes should be well marked and weight limits placed on roadways that may cross these underground vessels. All underground vessels should be cathodically protected to prevent damage due to corrosion. Underground piping should be double-walled at vehicle crossings.
- Equip Open Storage and Process Tanks with Liquid Level Control Devices, and Grounding Apparatus (where necessary): In addition, overflow alarms should be installed to warn personnel of tank overfilling. Similarly, temperature and pressure alarms should be installed on closed chemical processing equipment, to alert industry personnel to runaway reactions or other factors resulting in excessive

temperatures and pressures. Such extreme conditions can otherwise result in the automatic opening of relief valves, subsequently spilling the process vessel's contents.

- Use Proper Drum Handling Equipment: The practice of scooping drums with the forks of a forktruck should be eliminated. Pallets should be used to aid handling and inspection. Oil dispensing racks should be provided with drip pans.
- Secure Loading/Unloading Pump Station Controls: In a manner to prevent the pumps from being turned on by unauthorized personnel. Warning signs or physical obstructions, such as crossing gates, should be used to prevent trucks from driving away while the loading hose is connected.
- Eliminate All Unnecessary Cross Connections: All unnecessary floor drains should be plugged, especially those in high-risk areas.
- Utilize Automatic Stormwater and/or Sewer Sampling Systems to Monitor for Spills: These sampling systems can be tied into automatic shutoff devices that will prohibit discharge from a plant effluent system.

#### 2.3.4.5 Emergency Response Equipment and Procedures

##### Equipment

Information that should appear in this section of the IU Plan includes an inventory of available IU emergency response equipment and a detailed description of emergency response procedures. The emergency response equipment inventory should also contain the equipment location on the facility layout diagram and a physical description of each piece of equipment. A summary of the information that should appear in this part of the plan follows:

- Communication Equipment and Alarms: A communication system should be established for reporting emergencies and providing immediate emergency instruction to facility personnel with the use of a telephone, intercom, radio, alarm, etc.
- Spill Containment and Control Equipment and Tools: Examples of this type of equipment include sorbent materials and dry chemicals which are often used for containing spills of small volumes.
- Spilled Material Storage Containers: Chemical spills must be contained and removed as soon as possible to prevent materials from spreading into other areas.
- Protective Clothing and Respirators: In responding to an emergency hazardous spill, employees should take precaution to ensure that as

much skin is covered as possible. Flameproof protective clothing will not only prevent chemical burns, but will also protect skin during a fire. Other examples of protective clothing include:

- Rubber Gloves
- Apron
- Goggles/Face Mask
- Hard Hat.

In addition, depending on the nature of the emergency, the use of self-contained breathing apparatus may be necessary. All employees involved in response procedures should have access to the breathing apparatus and be adequately trained in the use of this equipment.

- First Aid Kits: A well equipped first aid kit should be immediately available for use if necessary. The plan should indicate the location of the kit, and the items that it contains. Items that are essential to a first aid kit include: antiseptic solutions and bandages for application of wounds; artificial respiration devices, and eyewashing solutions and cups.
- Ventilation Equipment: Before entering an area where a potentially explosive spill has occurred, tests should be made for explosive atmosphere, the presence of toxic gases and oxygen deficiency. Whenever an adverse atmosphere is encountered, forced ventilation, such as powered explosion-proof ventilators, blowers, or fans, can be used to create safe conditions. Ventilation should be continued as long as recurrence of the hazard is possible.
- Decontamination Equipment: The appropriate protective clothing and monitoring equipment should be used in responding to a spill of radioactive material.
- Fire Extinguishing Systems: A list of fire extinguishers and their locations should be posted throughout the plant. In addition, a map that shows both fire extinguisher location and fire hose connections should be submitted to local response agencies.

### Procedures

Each IU Plan should contain a detailed description of procedures to be followed in responding to a hazardous spill at the facility. The established procedures should be designed to eliminate danger to human health and to facilitate containment and clean-up of a spill. A description of the procedures should contain the following items: notification of responsible personnel, chain of command, evacuation procedures, notification of response agencies, and spill assessment and response procedures. A fuller description of each of these elements follows:



- Notification of Facility Personnel Responsible for Responding to Spills: Each facility should have a person(s) who is qualified to respond to a spill at the facility. There should be at least one person available at all times to carry out appropriate response procedures. This person(s) should be familiar with all aspects of the Plan and have the authority to commit the resources necessary to initiate emergency response procedures. All Employees should be aware of which person(s) to contact if a spill takes place. It is recommended that a sign indicating who to contact and the appropriate phone number(s) be posted in all areas where a spill may occur.
- Chain-of-Command: Proper chain-of-command procedures should be followed when responding to an accidental spill or slug to ensure that all necessary personnel and response agencies are notified. A description of these procedures should be included in the Plan.
- Evacuation Procedures: An evacuation plan should be posted throughout the facility and discussed in safety training sessions. The plan should contain: (1) a map of evacuation routes; (2) a map of alternative evacuation routes; and (3) a description of signals used to begin and conduct an evacuation. A copy of the evacuation plan should be submitted to the local police department; fire department; and hospitals for their records.
- Notification of Response Agencies and Contractors: A list of spill response agencies and their numbers should be available to each employee assigned to coordinate spill response activities. In the event of potential or actual emergency situations, the appropriate response agency should be notified immediately.
- Spill Assessment and Response Procedures: The person(s) designated to carry out spill response procedures should begin by assessing the spill. A determination should be made on the origin of the spill and what impact the spill will have. Based on this assessment, the coordinator will initiate proper response procedures. Spill response procedures that should be included in the plan include:
  - Notification of facility personnel by activating the communication and/or alarm system
  - Begin evacuation procedures if necessary
  - Notification of appropriate local, State, and Federal agencies
  - Stop the flow by shutting off pumps or closing valves
  - Prevent contact between incompatible materials
  - Commence clean up activities
  - Submit necessary reports.
- Procedures for Clean-up, Treatment, and/or Disposal of Spilled Materials: Once a spill has been contained, clean-up of the waste

material begins. The material should be immediately treated or disposed of to eliminate health and safety hazards and to prevent the dispersion of the material. The objectives of treating the material prior to disposal are to reduce the potential impact of the waste on water quality and to recover valuable materials. Several methods of disposal are available, however, the facility should choose the proper method based on the nature of the material. If waste generated from a spill is determined to be hazardous, the facility must meet RCRA requirements. Information pertaining to treatment and disposal methods used by the facility should be included in the Plan.

In addition, if it is anticipated that outside contractors and/or consultants may be utilized in clean-up, treatment, or disposal methods, the plan should include the name of the company; contact person and phone number; and the available equipment and manpower necessary for the job, if possible.

These procedures should be consistent with the ones established in the facility's OSHA Emergency Action Plan, as required by 29 CFR §1910.38.

#### 2.3.4.6 Slug Reporting

Procedures for reporting and documenting spills and slug discharges should be described in the Plan. At a minimum, the IU follow-up report should include: (1) the time, date, and cause of the incident; (2) the impact of the spill on the POTW and the environment; (3) extent of injury and/or damage; and (4) how other incidents of this type can be avoided in the future. A description of clean-up, treatment, and disposal procedures must be included where applicable. The report should also evaluate the adequacy of the IU's response procedures. In particular, the investigator's reports should address the following questions:

- Was the safety of industry personnel and the surrounding community ensured throughout the incident?
- Were personnel working close to the incident provided adequate access to breathing apparatus, protective clothing, etc.?
- Was the spill confined quickly?
- Was fire extinguishing equipment adequate and readily available when needed?

- Did secondary containment structures remain intact throughout the spill response? Were these structures of adequate volume to confine the spill or slug discharge?
- Were appropriate POTW, fire department, or other officials immediately notified of the incident?

Recommendations for improving operational, inspection, maintenance, and/or spill response procedures based upon the incident should be included. The investigation report should then be made available to the POTW, fire department, and insurance firms if applicable, to assist these agencies in their own investigations. In addition to reporting procedures, copies of forms used for reporting and a list of appropriate response agencies and phone numbers should be incorporated into the Plan.

#### 2.3.4.7 Training Program

More important than establishing the IU Slug Control Plan is the effective implementation of that plan by IU employees. The IU's Plan should contain an outline of the training program given to employees. An employee training program can provide employees at all levels of responsibility with a complete understanding of the processes and materials used, the safety hazards, the practices for preventing discharges, and the procedures for responding properly and rapidly to hazardous materials spills and slugs. Specialized training should also be provided to each employee or group of employees that handle potentially hazardous chemicals.

Periodic training sessions are essential and should be conducted at appropriate intervals to assure complete understanding of the IU's Plan, goals and objectives. New employees should be trained immediately upon employment. Employees should also be notified and retrained when their responsibilities or functions under the plan change. Training records should be maintained by the plant manager as long as a person is employed at the facility and for at least three years from the date the employee last worked at the facility. Periodic drills should be instituted to evaluate employee knowledge and understanding of the Plan. The purpose and frequency of such drills should be indicated in the Plan. Training to implement the OSHA-required Emergency Action Plan should also be coordinated with the Plan training, especially when the

procedures and responsibilities are uniform. To the extent the procedures differ, Emergency Action Plan training should be conducted periodically as well to ensure worker safety in the event of a slug or any other emergency.

#### 2.3.4.8 Certification

A qualified professional should certify the adequacy of the measures described in the Plan. Table 2-6 shows an example of what this certification should include.

### 2.4 IMPLEMENT THE PROGRAM

Upon completion of the development of a Slug Control Program, including the identification of the IU community, development of appropriate legal/enforcement authority, assignment of risk categories and controls to address those risks, the program should be implemented. There are three activities in the implementation of a Slug Control Program:

- The review and approval process of IU Plans (Section 2.4.1)
- An IU inspection and monitoring program (Section 2.4.2)
- POTW Slug Response (Chapter 3).

POTWs may find it useful to develop a Procedures Manual to provide a written record of the POTW's Slug Control Program. It should address all aspects of the POTW's Program in summary form, including review of IU Plans, POTW inspection and monitoring of IUs, and slug response procedures.

#### 2.4.1 POTW Review and Approval of IU Slug Control Plans

EPA recommends that POTWs review the Plan of all applicable industrial facilities to ensure that all pertinent slug discharge control issues are addressed. Appendix B includes a review checklist which can aid the POTW in reviewing the IU implementation of required procedures.

The IU should submit a Slug Control Plan to the POTW within three months of notification and complete implementation of the Plan within six months of approval. The Plan should detail facilities and procedures to eliminate or minimize the slug discharge of pollutants into the sewer system which could

TABLE 2-6. CERTIFICATION OF THE SLUG CONTROL PLAN

BASED ON MY INQUIRY OF THE PERSON OR PERSONS DIRECTLY RESPONSIBLE FOR MANAGING COMPLIANCE WITH THE SLUG CONTROL MEASURES IN THE SLUG CONTROL PLAN, I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS FACILITY IS IMPLEMENTING THE SLUG CONTROL PLAN SUBMITTED TO THE [POTW].

NAME/TITLE OF AUTHORIZED REPRESENTATIVE  
OF THE IU RESPONSIBLE FOR THE SLUG CONTROL PLAN

DATE

I CERTIFY THAT THE SLUG PREVENTION AND CONTROL EQUIPMENT INSTALLED BY THE INDUSTRY WILL PROVIDE ADEQUATE PROTECTION FROM SLUG LOADING WHEN USED AND MAINTAINED PROPERLY.

NAME

DATE

ABC CIRCUITS  
10 Circuit Drive  
Circuit Town, IN 12345

SLUG CONTROL PLAN

The purpose of this plan is to provide detailed instructions for slug prevention and control.

A complete copy of this plan is maintained at the following locations:

1. Materials Department
2. Security Desk
3. Safety Office.

This plan will be updated whenever the situation dictates, and all departments and locations will receive updated copies.

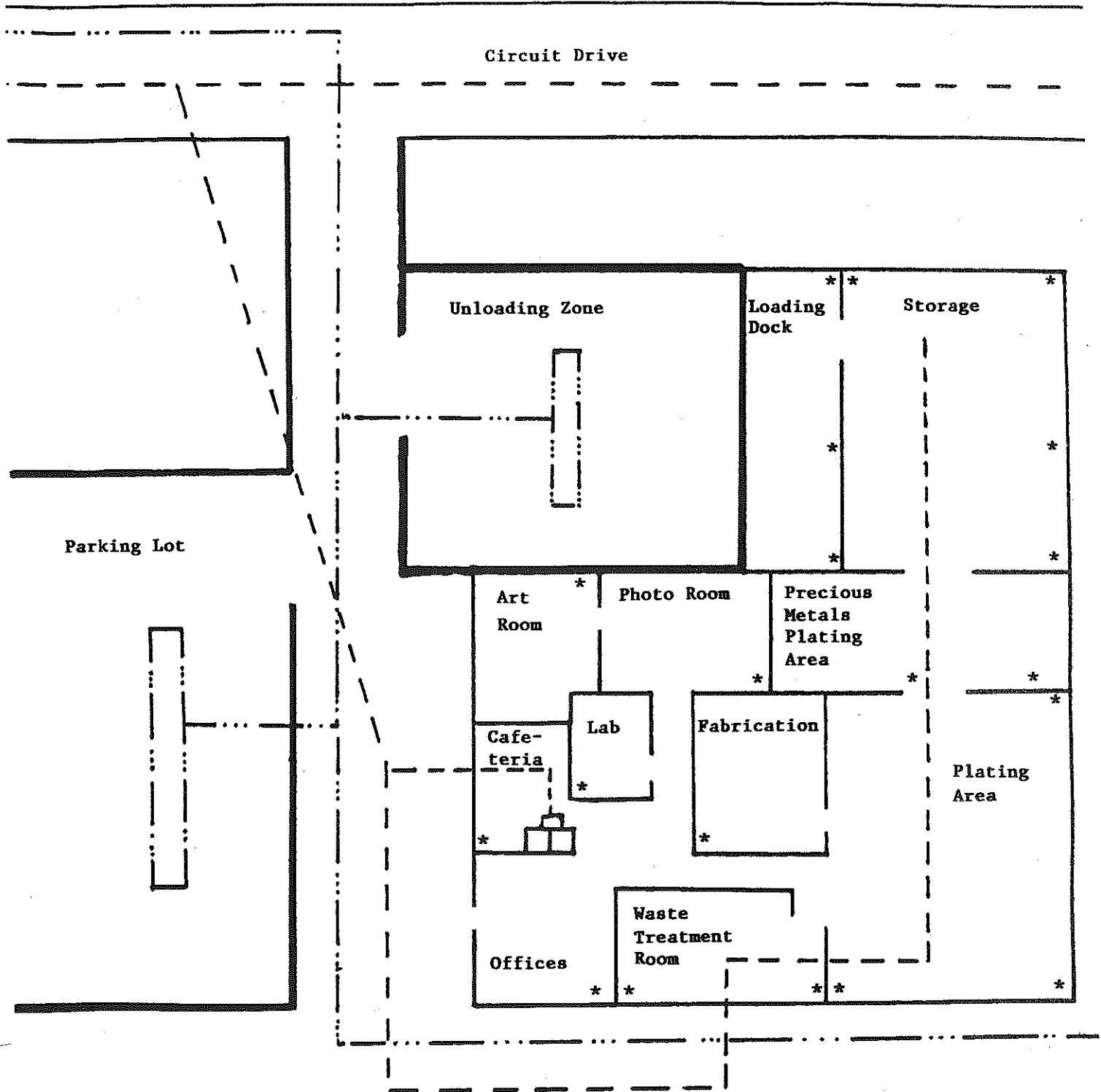
|                    |                   |                  |                |
|--------------------|-------------------|------------------|----------------|
| Emergency Contact: | Chip Smith        | Work Phone:      | (111) 222-3333 |
| Title:             | Plant Manager     | Emergency Phone: | (111) 123-4321 |
| Secondary Contact: | Susan Jones       | Work Phone:      | (111) 222-3333 |
| Title:             | Safety Supervisor | Emergency Phone: | (111) 234-5432 |

FACILITY DESCRIPTION

ABC Circuits is a printed circuit board manufacturer. The facility operates two shifts per day, Monday through Friday, from 7:00 a.m. to 3:00 p.m. and 3:00 p.m. to 11:00 p.m. There are 75 people employed on the first shift and 19 during the second. Approximately 300 finished boards are manufactured per day.

Sources of wastewater from the printed circuit board manufacturing operation includes rinse water, spent process baths, and spent cleaning solutions. Hazardous materials are stored until removed to a licensed disposal site with the specified 90-day period. Wastewater is neutralized with sodium hydroxide and is batch discharged to the city sewer system at a pH range of 6-9.

# ABC CIRCUITS



- - - - - Sanitary Sewer  
 ..... Storm Sewer  
 \* Fire Extinguisher

TABLE A. CHEMICAL AND MATERIAL INVENTORY

| <u>Chemical</u>   | <u>Location in Plant</u>     | <u>Maximum Value</u>         | <u>Container Type</u>   | <u>Container Volume</u>      | <u>Remarks</u>  |
|---|------------------------------|------------------------------|-------------------------|------------------------------|---|
| Copper Plating Batch<br>- Copper Sulfate<br>- Sulfuric Acid                   | Plating Room                 | 2,000 gallons                | Tank                    | 2,000 gallons                | Spill from failure of copper plating tank or filter pump system.  |
| Electroless Copper Solution<br>- Copper Salts<br>- Formaldehyde<br>- Methanol | Storage Area<br>Plating Room | 350 gallons<br>150 gallons   | Drum<br>Tank            | 55 gallons<br>150 gallons    | Spillage from storage drums, plating tank, or addition pump.  |
| Etchant   | Storage Area<br>Plating Room | 600 gallons<br>150 gallons   | Drum<br>Tank            | 55 gallons<br>150 gallons    | Spillage from storage drums; failure of etcher feedline; failure of etcher containment feed   |
| Methylene Chloride  | Storage Area<br>Plating Room | 1,000 gallons<br>500 gallons | Tank<br>Tank            | 1,000 gallons<br>500 gallons | Spill from failure of storage tanks, recovery still tank, R&R machine containment structure, or interconnecting pipe. If involved in a fire or chemical reaction, it could give off chlorine gas and other poisonous gases, such as phosgene. |
| Nickel Plating Solution<br>- Nickel sulfamate                                 | Plating Room                 | 110 gallons                  | Tank                    | 55 gallons                   | Spillage from storage containers, failure of nickel plating tank  |
| Screen Wash<br>- Toluene<br>- Acetone   | Photo Dept.                  | 800 gallons                  | Tank<br>Drum            | 300 gallons<br>55 gallons    | Spillage from storage drums; failure of recirculator in spray booth   |
| Sulfuric Acid   | Plating Room                 | 1,000 gallons                | Tank                    | 55 gallons                   | Spillage from storage drums   |
| Trichloroethane   | Plating Room                 | 500 gallons                  | Degreasing Unit<br>Tank | 50 gallons<br>600 gallons    | Spill from failure of storage tanks, recovery still tank, containment structure, or interconnecting pipe net. If involved in a fire or chemical reaction, it could give off chlorine gas and other poisonous gases, such as phosgene.         |



#### REPORTABLE MATERIAL DATA

Table A is a list of chemicals present in large quantities. It includes all substances that are listed, or have components that are listed, as hazardous materials and are present in quantities greater than 55 gallons or the Reportable Quantity (RQ) of the hazardous material.

#### SLUG PREVENTION

All drums are to be marked with a hazardous waste label and must be sealed at all times when not being filled or dispensed from. Drums put up in the dispensing rack are to be fitted with approved faucets and pressure relief devices. Drip cans are to be kept under facets at all times.

Plating tanks must be visually inspected by the shift supervisor at the beginning and end of each shift for any signs of leakage or potential problems. An inspection log will be maintained by the safety officer.

All batch operation discharges must be tested for pH and neutralized if appropriate. Continuous pH monitoring must be conducted during discharge.

#### SPILL CONTAINMENT

The first concern is to stop the source of the spill and provide ventilation to the area. Leaking containers must have their contents reconfined by transferring the chemical or confining the container. The spilled material must be kept from reaching a floor drain or from soaking into the ground. Inert absorbent material, rags, paper towels, and such can all be used to sop up such a spill or dike it away from a sewer or open ground. Do not use iron or any item that could spark a flammable material while cleaning up. Wear a respirator for cleaning spills of over 1/2 gallon. If a solvent odor is strong, clear the area of all but the cleanup crew, who must wear respirators. Neoprene gloves and boots will have to be used by the cleanup crew unless more inert material is available. Contaminated earth must be dug up and drummed for disposal. For a spill of a few gallons, the best procedure is to isolate the spill and soak it up with inert media, taking all safety precautions and disposing in a flammable waste can. Larger spills will require a separate

disposal drum and a more extensive cleanup. If a spill results in the material reaching the sewer system, stop the municipal drain and halt any more solvent from reaching the sewer, and notify the appropriate authorities.

#### EMERGENCY RESPONSE EQUIPMENT INVENTORY

1. 8 SCBA emergency air packs (Lab)
2. 21 fire extinguishers (located throughout the facility)
3. 20 gallons of acid neutralizer (Waste Treatment Room)
4. 8 sets of protective clothing (Lab)
5. 50 lbs absorbent material (Waste Treatment Room)
6. Portable eye showers
7. Fire alarms.

#### EMERGENCY RESPONSE PROCEDURES

Any employee discovering the release of any toxic or potentially hazardous material that is not readily controlled must activate the emergency alarm and notify an emergency coordinator. The name and phone number of the emergency coordinator is posted throughout the facility.

In the event of any release of potentially toxic or hazardous materials necessitating evacuation, the emergency coordinator will assess the situation and notify all appropriate agencies.

Control and containment of any spill of hazardous materials will be accomplished through the use of materials and procedures readily available throughout the facility and manufactured specifically for the materials involved.

It is not anticipated that outside contractors will be utilized, however, the companies listed below have available the necessary equipment and manpower for cleanup of a spill:

- |                    |                       |
|--------------------|-----------------------|
| 1. Spill Away      | Phone: (111) 777-8888 |
| 2. Cleanland, Inc. | Phone: (111) 777-9999 |

### SLUG REPORTING PROCEDURES

After any reportable incident, a member of the emergency coordinators group will notify the EPA Regional Administrator and any appropriate State and local agencies that all appropriate follow-up actions have been implemented per the facilities' Slug Control plan. This and all other needed reports will be processed within five days of the incident.

### TRAINING

All personnel involved in manufacturing and cleanup activities will receive instruction in the proper handling and disposal of chemicals and cleanup materials in order to keep regulated materials out of industrial wastewater. New employees will be trained in these procedures immediately. All personnel working in these activities must be familiar with this plan and must follow the procedure established to eliminate regulated materials from entering the wastewater system.

Training consists of classroom instruction which reviews the following:

1. The chemicals known to be used at the plant and the areas in which they are used
2. The location of lift stations and drains with emphasis upon the location of pretreatment system systems for each area in the plant
3. The Slug Control Plan and the proper procedures for handling and disposing of hazardous materials.

### CERTIFICATION

BASED ON MY INQUIRY OF THE PERSON OR PERSONS DIRECTLY RESPONSIBLE FOR MANAGING COMPLIANCE WITH THE SLUG CONTROL MEASURES IN THE SLUG CONTROL PLAN, I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS FACILITY IS IMPLEMENTING THE SLUG CONTROL PLAN SUBMITTED TO THE [POTW].

\_\_\_\_\_  
NAME/TITLE OF AUTHORIZED REPRESENTATIVE  
OF THE IU RESPONSIBLE FOR THE SLUG CONTROL PLAN

\_\_\_\_\_  
DATE

I CERTIFY THAT THE SLUG PREVENTION AND CONTROL EQUIPMENT INSTALLED BY THE INDUSTRY WILL PROVIDE ADEQUATE PROTECTION FROM SLUG LOADING WHEN USED AND MAINTAINED PROPERLY.

NAME \_\_\_\_\_

DATE \_\_\_\_\_